



An Analysis Of Learning Strategy Pertaining To Brain Dominance Of Students At SMA Alhira

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Abstrak

Penelitian ini dibuat berdasarkan dari permasalahan yang ditemukan di SMA Alhira: ketidaktahuan siswa tentang dominasi otak, keragaman strategi pembelajaran siswa serta penggunaan strategi pembelajaran yang sama untuk semua peserta didik. Penelitian ini bertujuan untuk mengetahui dominasi otak, strategi pembelajaran, dan strategi pembelajaran siswa yang memiliki dominasi otak kanan atau kiri. Penelitian ini merupakan penelitian deskriptif dengan menggunakan pendekatan kuantitatif. data dikumpulkan dengan menggunakan kuesioner. Peneliti menganalisis data dengan mengecek kembali kebenaran data yang telah dikumpulkan. Kemudian, menjadikan data tersebut menjadi tabel. Selanjutnya, memberi skor pada data. Terakhir, meletakkan skor tersebut pada tabel distribusi. Peneliti menemukan bahwa sebagian besar siswa adalah dominasi otak kiri dan hanya satu siswa yang seimbang antara otak kiri dan kanan. Siswa menggunakan berbagai strategi. Siswa yang berdominasi otak kanan memiliki berbagai jenis strategi pembelajaran. Siswa yang berdominasi otak kiri memiliki strategi pembelajaran yang beragam. Hal ini berarti bahwa dominasi otak tidak benar-benar menentukan preferensi strategi pembelajaran siswa.

Kata Kunci: *Dominasi Otak, Strategi Belajar*

Abstract

This research was due to problems found in Senior High School Alhira: the students' ignorance about brain dominance, the variety of students' learning strategy, and the using of the same learning strategy for all of the students. This research aimed to find out the Senior High School Alhira brain dominance, learning strategies, and learning strategies of students who have the right or left brain dominance. The research is descriptive research using the quantitative approach. The data collected using a questionnaire. The researcher analyzed the data by rechecking the correctness of the data that has been gathered. Then, tabulated the data into the table. Then, scoring the data. Finally, putting the score into the distribution

table. The researcher found that most of the students were left brain dominance and only one student who was balanced between left and right brain. Students used various strategies. The students who have right brain dominance have various kinds of learning strategies. The students who are left-brained have managing emotion as their learning strategy preference. This means that the brain dominance did not really dictate the students' learning strategy preference.

Keywords : *Brain Dominance. Learning Strategy*

INTRODUCTION

Hemisphericity has therefore been considered to be relevant in the different areas of education such as second or foreign language learning and acquisition. Brain is divided into two hemispheres. They are left and right. In the left brain, there are two areas, Broca's and Wernicke's areas were identified as the two areas for the language functions (Dülger, 2012). The Broca's is related to the loss in the expressive language functions whereas the Wernicke is the region for receptive language functions (Osman Dülger, 2012). Meanwhile, the right brain processes non-verbal, concrete, and spatial information. The right brain gives attention to similarities in patterns, and looks at it from a holistic perspective. For that reason, the right brain is found to have a global bias. Artistic abilities such as music and graphics are among the functions of the right brain. However, the right and the left brain are not completely independent and there are fibers which is called *corpus callosum* that connect these halves, but a person is believed to rely on one half of the brain more than the other, and his brain dominance is assumed to determine his preferences, style, personality characteristics, or even career choices (Dülger, 2012).

Considering that students tend to be dominant on either of the two, it is important for teachers to recognize their students' brain dominance in order to help students to realize their capability and help them to be able to overcome the difficulty in learning foreign languages, especially English. This can also help the teacher to choose the right learning strategy for her/him to teach to the students.

Furthermore, there were several researches which have discussed this issue. The first, Lestari's research described learning strategies employed by the students of English Education Department in UIN Syarif Hidayatullah Jakarta which pursue in the fourth semester and sixth semester. It revealed the FITK students used all learning strategies, including memory, cognitive, compensation, metacognitive, affective and social. For the most frequently strategy used is metacognitive strategy. Whereas, the least frequently used by the 4th semester students is memory strategy and by the 6 th semester is social strategy. Second, The study conducted by Ozel which investigating the correlation between brain dominance and language

learning strategies used by the non-native English speakers learning English in English Preparatory School at Cyprus International University. The study concluded that left-brained participants use social and metacognitive strategies more than right and whole-brained participants. However, no other significant differences were found between any of the pairs in the study. In addition, The study conducted by Fitriansyah covered the students' ability to understand English reading against the brain dominance they have. It founded there is no significant effect on left brain and right brain dominance in understanding English text reading. So, this study shows that brain dominance cannot be a benchmark in comprehension of English text reading.

Moreover, there were several problems found in the field. First, by interviewing the students, it was known that the students do not know their brain dominance and the learning strategy the students preferred was various. It assumed it is better to find out the learner's brain dominance in order for the teacher to use the better teaching strategy for them. This assumption is in line with Olfaz and Hassani and Rahmani who said that the right-brained students were good at responding to demonstration instructions and visuals displayed a good performance in the vocabulary section. However, Hassani and Rahmani said that the left-brained learners, after receiving instructions on vocabulary strategies, did better in learning vocabulary in comparison with right-brained learners (Oflaz, 2011). Then, the using of similar learning strategy for all of the students without knowing the students' brain dominance tendency. This might be a problem if the teacher uses the left brain strategy such as using word puzzles while most of her students tend to the right brain dominance. This would make the process of learning not effective. Based on this fact, the research entitled "An Analysis on Learning Strategy Pertaining to Brain Dominance of Students at SMA ALHIRA" is important to be done to find out the students' brain dominances and the students' learning strategies.

RESEARCH METHOD

This research is quantitative research. Descriptive Quantitative research is the collection and analysis of numerical data in order to describe, predict or control phenomena of interest (Gay, 2012). The design of research is descriptive research. Descriptive research is a quantitative type of research which includes making descriptions in education phenomena (Gall, 2003). This research was aimed to find the students' learning strategy and their brain dominance. So, descriptive quantitative research is the most related research type with the aim of this research. The researcher conducts the research toward the Senior High school students of Al Hira. As seen in the table below:

Table Population

No	Class	Students
1	X	6
2	XI	6
3	XII	12
	Total	24

Source: Staff in Senior High School of Al Hira

The researcher used a total sampling technique. As Arikunto stated, if the subjects are less than 30, it is better to take all of the subjects. But if the subjects are more than 30, it might be taken between 10% - 15%, 20% - 25% or even more (Sugiyono, 2016). There is one instrument that could be used in quantitative research which is questionnaire. It is a sequence of statements to measure responses of an individual or group (Arikunto, 2010). In order to know the students' brain dominance and their language learning strategy, 50 statement questionnaires will be given to the students related to learning strategy. The validity of instrument was examined using expert validity and Statistical Package for the Social Sciences (SPSS) version 20. The items which are accepted need to have a higher value than 0.3 after computing it by using SPSS (Field, 2003). Moreover, the research was analyzed using statistical analysis. Then, the data would describe the students' language strategies differences based on their brain dominance. It can be seen in the following step: 1) Editing that rechecks the correctness of the data that has been gathered. 2) The respondents answer would be coded by the researcher. 3) Tabulating that is collecting and listing the data into the table. 4) Scoring the data 5) Putting the score into the distribution table.

RESULTS AND DISCUSSION

Students' Learning Strategy

The students' learning strategy was measured by giving them 50 items of questionnaire that was adopted from the Strategy Inventory for Language Learning (SILL). The questionnaire was divided into 6 parts which are from part A to Part F. Each part of the questionnaire represents one language learning strategy. The students' tendency of using a certain language learning strategy was indicated by their average score of certain parts. Below is the key to understand the students' average score:

Table 1 Key to Understanding Students' Average Scores

High	Always or almost always used	4,5-5,0
	Usually used.	3,5-4,4
Medium	Sometimes used.	2,5-3,4
	Generally not used.	1,5-2,4
Low	Never or almost never used	1,0-1,4

Furthermore, the table 1 will be used to understand the students score below:

Table 2 Students' Language Learning Strategy

No	Name	Left Brain			Right Brain		
		Remembering more effectively.	Compensating for missing knowledge	Organizing & evaluating learning	Managing the emotions	Learning with others	Using all mental processes
1	AR	4,6	4,3	4,8	4,7	4,7	4,3
2	MFD	2,4	2,0	2,7	2,7	2,3	2,9
3	HDZ	3,7	2,8	3,3	2,2	4,0	2,9
4	A	3,4	3,2	3,3	3,3	3,7	2,6
5	AA	4,7	4,3	4,2	5,0	4,3	4,0
6	AN	3,0	2,3	3,4	2,7	2,3	3,1
7	MZ	4,6	4,3	3,8	4,2	4,0	4,2
8	MG	2,4	3,0	4,0	3,2	3,7	2,9
9	NMP	3,8	3,8	3,3	3,2	3,3	3,5
10	MRA	3,4	4,3	4,3	4,3	4,5	3,0
11	SAF	3,2	3,0	3,1	2,8	3,8	2,9
12	RP	3,1	2,8	3,4	3,2	3,2	3,2
13	AS	2,6	3,2	3,8	2,5	3,5	2,6
14	AOP	2,9	3,7	3,1	3,0	4,0	3,4
15	AAK	4,0	3,7	3,7	4,3	4,2	3,4
16	H	3,3	4,0	4,4	4,7	3,2	4,1
17	MFMK	2,3	2,7	2,3	2,3	2,7	2,6

18	GMS	3,6	3,7	4,0	4,0	4,3	3,8
19	MMH	3,3	3,7	3,9	4,7	4,0	3,6
20	LA	2,8	2,7	3,2	3,3	3,2	2,6
21	S	4,3	3,8	3,6	4,5	4,5	4,1
22	TR	3,4	2,8	2,4	2,7	2,5	2,1
23	RA	2,4	4,0	4,6	4,3	4,8	3,9
24	FFH	3,7	2,8	3,2	2,8	2,3	2,9

Based on the table above, it can be viewed that students used various strategies; this meant they were not only relying on one strategy. For example, AR almost always uses remembering strategy, organizing & evaluating learning, managing emotions, and learning with other strategies in learning English. Furthermore he usually used mental processes to compensate for missing knowledge strategies in learning English. However, there is at least one dominant strategy that each student uses. It can be viewed by looking at the highest score that the students get. In AR cases, the highest score is organizing & evaluating learning which means he used this strategy more often than the other strategies.

Based on the facts above, the researcher tabulated each students' most dominant English learning strategy into the following table:

Table 3 Students Dominant Strategy

No	Name	Most Dominant Strategy
1	AR	D
2	MFD	B
3	HDZ	F
4	A	F
5	AA	E
6	AN	D
7	MZ	A
8	MG	D
9	NMP	A
10	MRA	F
11	SAF	F
12	RP	D
13	AS	D

14	AOP	F
15	AAK	E
16	H	E
17	MFM K	C
18	GMS	F
19	MMH	E
20	LA	E
21	S	E
22	TR	A
23	RA	F
24	FFH	A

According to the table above, it can be found that there were 4 students who were using memory strategy more than other strategies, 1 student who used mental process, 1 students was using compensating for missing knowledge, 5 students were using organizing and evaluating learning, 6 students were using managing emotion, and 7 students using learning with other strategy more than other strategies.

The Students' Brain Dominance

The students' brain dominance was measured by giving them 18 items of questionnaire. It was a closed questionnaire with two alternative options. The students' brain dominance was determined by which options they chose the most. The students were left brain dominance if they chose option A mostly and the students were right brain dominance if they chose option B mostly. Below were the result of the questionnaire:

Table 4 Students' Result of Brain Dominance Questionnaire

No	Name	Total A	Total B	Dominance
1	AR	8	10	Right
2	MFD	8	10	Right
3	HDZ	15	3	Left
4	A	11	7	Left
5	AA	11	7	Left
6	AN	8	10	Right
7	MZ	11	7	Left

8	MG	8	10	Right
9	NMP	8	10	Right
10	MRA	9	9	Balance
11	SAF	10	8	Left
12	RP	10	8	Left
13	AS	13	5	Left
14	AOP	11	7	Left
15	AAK	14	4	Left
16	H	7	11	Right
17	MFM K	8	10	Right
18	GMS	7	11	Right
19	MMH	14	4	Left
20	LA	10	8	Left
21	S	7	11	Right
22	TR	11	7	Left
23	RA	8	10	Right
24	FFH	10	8	Left

Based on the table above, it can be viewed as the brain dominance of each student. Furthermore, there were 13 students who were left brain dominance, 10 students who were right brain dominance, and 1 student who was balanced between left and right brain.

Furthermore, there were 10 students who had right brain dominance. Furthermore, the researcher also provided their most dominant strategy. It can be seen on the table below:

Table 5 The students with Right Brain Dominance

No	Name	Dominance	Most Dominant Strategy
1	AR	Right	Organizing and evaluating Learning
2	MFD	Right	Using all Mental Processes
3	AN	Right	Organizing and evaluating Learning
4	MG	Right	Organizing and evaluating

			Learning
5	NMP	Right	Remembering more Effectively
6	H	Right	Managing Emotions
7	MFMK	Right	Compensating for Missing Knowledge
8	GMS	Right	Learning with other
9	S	Right	Managing Emotions
10	RA	Right	Learning with other

Based on the table above, it can be seen that the students who have right brain dominance have various kinds of learning strategies. 3 of them even chose the strategy that is supposed for the left brain dominance. Organizing and Evaluating learning were supposed for the left brain students. However, 3 of the right brain students were using that strategy as their preference strategy. This proved that brain dominance does not really dictate the students' preference for learning strategy.

Moreover, there were 13 students who had left brain dominance. Furthermore, the researcher also provided their most dominant strategy. It can be seen on the table below:

Table 6 The students with Left Brain Dominance

No	Name	Dominance	Most Dominant Strategy
1	HDZ	Left	Learning with other
2	A	Left	Learning with other
3	AA	Left	Managing the Emotion
4	MZ	Left	Remembering more Effectively
5	SAF	Left	Learning with other
6	RP	Left	Organizing and Evaluating Learning
7	AS	Left	Organizing and Evaluating Learning
8	AOP	Left	Learning with other
9	AAK	Left	Managing the Emotion
10	MMH	Left	Managing the Emotion
11	LA	Left	Managing the Emotion

12	TR	Left	Remembering more Effectively
13	FFH	Left	Remembering more Effectively

Based on the table above, most of the students who are left brain have managing emotion as their learning strategy preference. This also contradicts the theory which says that the left brain tends to be associated with logical, analytical, and mathematical processing. The right brain tends to rely on intuition. Managing emotion can be included in intuition. This means that the brain dominance does not really dictate the students' learning strategy preference. There are more factors such as age, teacher influence, etc.

Discussions

Based on the result of the research, it was found that there were 13 students who were left brain dominance, 10 students who were right brain dominance, and 1 student who was balanced between left and right brain. It was found that the students who had right brain dominance had various kinds of learning strategies. Three of them even chose the strategy that is supposed for left brain dominance. Organizing and Evaluating learning were supposed for the left brain students. However, 3 of the right brain students were using that strategy as their preference strategy. This proved that brain dominance does not really dictate the students' preference for learning strategy. Furthermore, most of the students who are left-brained have managing emotion as their learning strategy preference. This also contradicts the theory which says that the left brain tends to be associated with logical, analytical, and mathematical processing. The right brain tends to rely on intuition. Managing emotion can be included in intuition. This means that the brain dominance does not really dictate the students' learning strategy preference. There are more factors such as age, teacher influence, etc

Based on the findings above, the researcher concluded that brain dominance does not really dictate the students' English language learning strategy. This also means that the students do not rely on one strategy only in learning English, but they choose several of them. This result was also supported by the research that was done by Nurliana Octavia Lestari. She found that students used all learning strategies. This means that students choose various kinds of strategy regardless of their brain dominance. In addition, Chaidir Fitriansyah also found that there was no significant effect on left and right brain dominance toward the students' learning. This shows that brain dominance cannot be a benchmark in English learning strategies.

CONCLUSION

Based on the findings of the research, it can be concluded that; First, most of the students were left brain dominated and only one student who was balanced between left and right brain. Second, students used various strategies; this meant they did not only rely on one strategy. There were 4 students who were using memory strategy more than other strategies, 1 student who used mental process, 1 student was using compensating for missing knowledge, 5 students were using organizing and evaluating learning, 6 students were using managing emotion, and 7 students using learning with other strategies more than other strategies. Third, the students who have right brain dominance have various kinds of learning strategies. Three of them even chose the strategy that is supposed for left brain dominance. Organizing and Evaluating learning were supposed for the left brain students. However, three of the right brain students were using that strategy as their preference strategy. Fourth, the students who are left-brained have managing emotion as their learning strategy preference. This also contradicts the theory which says that the left brain tends to be associated with logical, analytical, and mathematical processing. The right brain tends to rely on intuition. Managing emotion can be included in intuition. This means that the brain dominance does not really dictate the students' learning strategy preference. There are more factors such as age, teacher influence, etc

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